

"Still
The Second
Best Thing
About Payday"

The NIH Record

New Cancer Therapy Applied To Brain Tumors in Animals

By Susan Jenks and Frances Taylor

In a new application of gene therapy, NIH scientists have borrowed a gene from the herpesvirus, inserted it directly into brain tumors in animals and destroyed the tumors with an antiviral drug. Results of the study, conducted by intramural investigators at NCI and NINDS appeared in the June 12 issue of *Science*.

"Essentially, what we've done is change a tumor genetically, so that it's like a herpesvirus," said Dr. Kenneth Culver, the NCI scientist who conceived the new gene therapy technique. "Potentially, this approach may have wide application to many other types of tumors."

"These results show that gene therapy is effective and nontoxic in eliminating brain tumors in rats," said neurosurgeon Dr. Edward H. Oldfield. "Our next step is to test this promising treatment in humans to learn if it can help people with incurable brain cancer." Oldfield, chief of the NINDS Surgical Neurology Branch, and his neurosurgical colleague Dr. Zvi Ram, were instrumental in developing the application of this idea for the treatment of experimental brain tumors in animals.

(See **CANCER**, Page 2)

Light Therapy Offers Promise For Treatment of Papillomas

By Jo Bagley

Revision of an old treatment technique has given new hope to those who suffer from the rare but potentially deadly disease of recurrent laryngeal papilloma (RLP). RLP, a disease that affects infants and small children as well as adults, results from the human papillomavirus (HPV), which causes wart-like tumors to grow in the larynx and respiratory tract, the air passages leading from the nose into the lungs. Although noncancerous, these tumors can grow very quickly and become life threatening when they grow large enough to interfere with breathing.

Many forms of treatments have been used to remove these tumors. Treatments used range from surgery to use of chemotherapy, vaccines, and antibiotics. Surgical removal of the tumors as well as use of carbon dioxide laser surgery, which uses an intense laser light that becomes a cutting laser when the light is absorbed by the water found in body tissue, are presently the most widely used forms of treatment. The problem is that these tumors have a tendency to return unpredictably once they are removed.

(See **LIGHT**, Page 14)

'The Year of Women'

Women in Science Careers Vow to Take Charge, Ride the Tide

By Carla Garnett

Nearly all the scientists, physicians and academicians assembled to speak at the recent forum on women in science careers had something basic in common with more than 90 percent of their audience—they were female.

By contrast, the discussion focused on an area that has been primarily dominated by males—upper-echelon positions in biomedical careers. Sponsored by NIH's Office of Research on Women's Health, the 2-day workshop "Women in Biomedical Careers: Dynamics of Change" began to fill in the framework formed at ORWH's March public hearing. Participants knew the task was formidable; simple statistics tell the story.

According to numbers presented at the hearing by the Washington-based Feminist Majority Foundation, 64 percent of United States medical school students in 1990 were male; men made up 79 percent of American medical school faculty; 84 percent of the country's physicians were men; and there was not one female dean among all U.S. medical schools. Latest census figures show that 51 percent of the country is female.

But that was all old news, really. The pre-



Dr. Vivian Pinn, director of NIH's Office of Research on Women's Health, greeted participants at the recent workshop, "Women in Biomedical Careers: Dynamics of Change."

vailing sentiment at the meeting was fresh: 1992 represents a window of opportunity for women in biomedical careers—in all careers, essentially—and for once the shutters are wide open.

"We know the problems," said Dr. Vivian Pinn, ORWH director, in opening remarks. "We're not here to dwell on the past, but to propel [ourselves] into the future."

In testament to the scope and importance of the problem, nearly every major medical insti-

(See **WOMEN**, Page 4)

DCRT Collaborates on Software to Make Sense of Sequences

By Gregory Wilson

In the Olympic high jump, when the athletes clear the bar at one height, the bar is moved up, and a new goal is set for the entire field of competitors. Applying modern computing technology to scientific inquiry is similar; accomplishments beget new goals. When biomedical researchers and computer scientists work together to solve today's problems, they are also looking to define tomorrow's challenges: making computationally intensive computer operations run faster, and faster still; or developing better ways to manipulate data to answer scientific questions.

Recently, biologists and computer specialists at the Division of Computer Research and Technology have been working with colleagues around the nation to develop software tools to help interpret genetic sequences. Gene sequencing has become an intense area of research worldwide, but after genes are sequenced and the information collected in a database, interpretation remains a major problem.

DCRT's participation in the software project is led by Dr. George Michaels, a molecular biologist who holds a joint appointment with NICHD. The effort began last year when Michaels and DCRT's Richard Feldmann organized a workshop that brought together some of the world's leading experts in logic programming. The participants decided to utilize the advantages of logic programming in a collaboration to construct sequence interpretation software—tools that would make analysis of genetic sequences easier for scientists.

Michaels and his collaborators have been very busy since then. The genome informatics tools that they have created allow researchers to get the answers to high-level research questions about specific chromosomes simply by

(See **SEQUENCES**, Page 12)

Healy To Host Town Meeting

NIH director Dr. Bernadine Healy will host her third "town meeting" at NIH on Monday, June 29, from 1 to 3 p.m. in Masur Auditorium, Bldg. 10. Titled "The NIH Workplace: Diversity in Harmony," the meeting will include two guests—Rep. Connie Morella of Maryland's 8th district, and *Washington Post* columnist Judith Martin, whose pen name is "Miss Manners." All are invited to attend.

CANCER (Continued from Page 1)

Although NIH's recombinant DNA advisory committee gave preliminary approval on June 1 for investigators to begin human trials, the study is not expected to start until late summer. The protocol, which will be led by Oldfield, is awaiting final approval by NIH director Dr. Bernadine Healy and the Food and Drug Administration.

In the animal study, scientists eliminated cancerous brain tumors called gliomas by injecting genetically engineered mouse cells directly into growing tumors, then treating the rats with the antiviral drug ganciclovir.

The mouse cells were programmed to produce a disabled mouse virus that can carry genes into cells. Scientists used a retrovirus—which only inserts genes into dividing cells such as those found in tumors—to slip a herpes gene into the brain tumors. They chose a gene known as the herpes simplex thymidine kinase gene, which makes dividing cells susceptible to destruction by ganciclovir.

Investigators treated a total of 14 rats with 10 injections of ganciclovir over a period of 5 days. In 11 rats, the brain tumors regressed completely. In the remaining three rats, investigators found small deposits of residual tumor cells.

In addition, Dr. Hiroyuki Ishii working in the laboratory of Dr. R. Michael Blaese, chief of NCI's cellular immunology section, observed an unexpected "bystander" effect, in which ganciclovir treatment not only killed tumor cells with the inserted kinase gene, but also nearby tumor cells not infected with the foreign gene. "Although we don't know how this effect occurs, hopefully it will increase our chances for success in treating the larger tumors found in humans," Blaese said.

The treatment did not appear to damage normal tissues near the tumor site, and there was no evidence that the engineered virus had spread to normal brain tissue or other parts of the body.

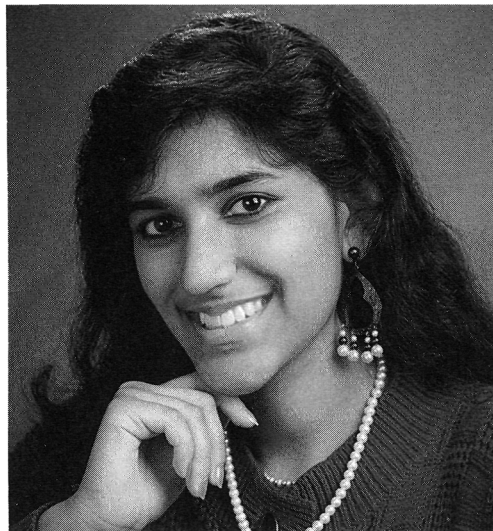
Scientists said the treatment's effectiveness and low toxicity may be explained, in part, by the brain's unique characteristics. Because normal brain cells, particularly neurons, do not usually divide, the retrovirus is unlikely to infect these cells. Also, few immune cells circulate inside the brain. This helps avoid rejection of the foreign mouse cells.

Estimates suggest that, each year, as many as 35,000 Americans develop brain tumors that begin in the brain or spread from cancer elsewhere in the body. Despite aggressive treatment with surgery, radiation, and chemotherapy, the current prognosis for patients with cancerous brain tumors is generally poor.

"We don't save many of these patients with any current treatment, so we need a new treatment that will help them," said Ram, who

will work with Oldfield in the upcoming protocol. "Gene therapy appears to have promise for treating these patients, but it must still prove itself in human trials."

NCI scientists are also developing the new technique for tumors in other parts of the body, according to Culver. Although the brain was the "ideal place to begin," he said, rejection of the foreign mouse cells elsewhere in the body can be controlled through short-term immunosuppressive therapy. Such an approach has already worked in liver tumors in rats, he said. □



Radha Goel, a student working in the Laboratory of Tumor Immunology and Biology, NCI, has received the Grand Award in the Montgomery County Science Fair for her project on "The Stability of the CC49 Single Chain Antigen Binding Protein." This work was done in the laboratory of Dr. Jeffrey Schlom. Goel also received the Dr. Michael Vaccaro Research Award for her paper on the same subject. She is currently a Howard Hughes fellow and in the fall will enter the B.A./M.D. program at George Washington University.

Stutterers Needed for Study

People who stutter, ages 18 and over, are needed for acute (single dose) trials of novel medications that may affect speech fluency. Both males and females are needed. All subjects must be native English speakers, in good health and females must not be pregnant. Will require two to four outpatient visits, a few hours each, to the Clinical Center clinic. If interested, call 496-7491, and leave message for Dr. Braun. □

AAAS Elects New Fellows

Several NIH'ers joined the roster of members elected as distinguished scientists recently by the American Academy of Arts and Sciences Council. At its annual meeting held in Chicago, the AAAS council named 271 new fellows including the following from NIH: Dr. Julius Axelrod of NIMH's Laboratory of Cell Biology; Dr. Bruce Baum, chief of NIDR's Clinical Investigations and Patient Care Branch; Dr. Joseph F. Fraumeni, NCI associate director for epidemiology and biostatistics; Dr. Florence P. Haseltine, director of NICHD's Center for Population Research; Dr. Alan S. Rabson, director of NCI's Division of Cancer Biology, Diagnosis, and Centers; Storm Whaley, former NIH associate director for communications; and Dr. Stuart H. Yuspa of NCI's Division of Cancer Etiology. □

Healthy Females Sought

The Uniformed Services University of the Health Sciences' department of medical psychology seeks healthy, nonsmoking females, ages 18-45, to participate in a women's health study. Participants will be paid \$200 for completion of three or four laboratory sessions, scheduled from 7 a.m. to noon, during which blood samples will be taken. If interested, call (301) 295-3263. □

The NIH Record

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Gene Defect for Familial Mediterranean Fever Mapped to Chromosome 16

Researchers at NIAMS have targeted the genetic defect for familial Mediterranean fever (FMF) to a small region of chromosome 16. Patients with this mysterious inherited form of rheumatic disease suffer fevers and periodic acute inflammation of joints and of tissues that line the abdominal and lung cavities. The finding, published in the June 4 issue of the *New England Journal of Medicine*, should aid counseling of ethnic populations in which the disease sometimes strikes as many as 1 in 14 individuals.

"A clear genetic basis for familial Mediterranean fever will help us tremendously in our search for genetic factors underlying other rheumatic diseases like systemic lupus erythematosus and rheumatoid arthritis," says Dr. Lawrence E. Shulman, NIAMS director. Though the cause of these more common disorders remains unknown, they share striking similarities with FMF. For instance, lupus and FMF both often cause severe inflammation of the joints, skin, and lung cavity; occasionally, like FMF, lupus affects the abdominal cavity. Lupus, rheumatoid arthritis, and FMF all are known to repeatedly flare and remit over a

patient's life. "This up-and-down course, in FMF at least, is likely to be linked to the gene itself," adds Dr. Daniel Kastner, senior author of the paper and investigator with the Intramural Research Program, NIAMS.

FMF manifests itself in different ways, causing visibly swollen joints or excruciating abdominal pain. Some people first experience attacks in infancy. FMF can lead to amyloidosis, a deadly buildup of protein in vital tissues such as the kidneys. FMF is extraordinarily prevalent among Armenians, Turks, Middle East Arabs, and non-Ashkenazi Jews living in the United States and abroad.

"Understanding the biological basis of FMF should yield important new insights into the mechanism of inflammation," says Kastner. During the course of FMF, white blood cells proliferate dramatically, invading tissues and causing inflammation. The investigators suspect that the FMF gene may regulate the activity of white blood cells, because it appears to be near other well-characterized genes with these regulatory functions.

Genetic studies of FMF will make possible a laboratory test for this frequently overlooked

diagnosis. Once the biochemical defect is known, more specific therapies can be designed. The current treatment is colchicine, a plant-derived drug that must be taken every day; however, this medication may cause diarrhea, occasionally reduces male fertility, and may cause birth defects.

To perform the necessary genetic studies, Kastner ventured to Israel and collected blood samples from 350 people from the countryside. He collaborated extensively with Dr. Mordechai Pras, professor of medicine at Sheba Medical Center, Tel-Aviv University, and the founder of a clinic there for patients with FMF. His son, Dr. Elon Pras, traveled to Kastner's laboratory and performed the decisive experiment that linked FMF to chromosome 16. Other collaborators included Dr. Luis Gruberg at Sheba Medical Center; Dr. Michael Dean with the Laboratory of Viral Carcinogenesis, NCI; and NIAMS intramural researchers Dr. Ivona Aksentijevich, Dr. James E. Balow, Leandra Prosen, and Dr. Alfred Steinberg.—Lauren Ward and Barbara Weldon □

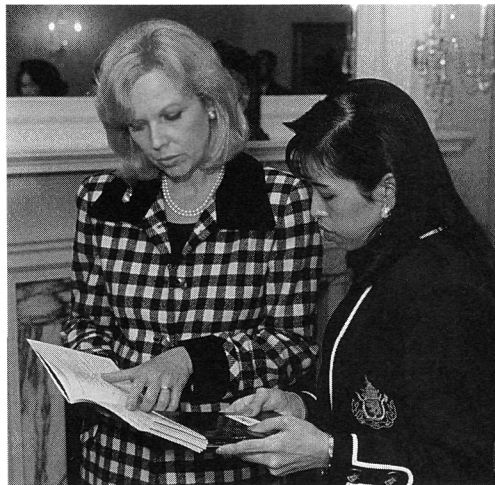
NIH, Thailand Sign Memorandum of Understanding

Her Royal Highness Princess Chulabhorn Mahidol, daughter of the King of Thailand, visited NIH recently to sign a memorandum of understanding with NIH director Dr. Bernadine Healy to renew a program of cooperation between NIH and the Chulabhorn Research Institute.

The agreement, originally made in 1989 at the initiative of Professor Dr. Her Royal Highness Princess Chulabhorn (who holds a Ph.D. in chemistry) established a program of cooperation in AIDS, cancer, and the biomedical applications of natural products, an area in which the princess has specialized. The revision broadens this to include other areas of mutual interest.

In signing the memorandum, Healy praised Chulabhorn "for the initiative you have taken through this agreement in establishing collaborative contacts between Thai and U.S. biomedical researchers...It is our hope, through this agreement, we will continue to promote research between scientists in our two countries in pursuit of our common objective—the improvement of the health of people in Thailand, the U.S. and throughout the world."

Chulabhorn, who has visited the NIH campus several times in the past, commented that science is international and transcends national boundaries. "During my visits to NIH, I have always been inspired to see so



Healy and Princess Chulabhorn of Thailand review text of the memorandum of understanding that they signed recently at NIH.

many renowned scientists at work for the benefit of mankind."

The princess founded the Chulabhorn Research Institute in 1987 in commemoration of King Bhumibol's 60th birthday, with the objective of providing a research facility to support projects backed by the king. It also was a further step in the princess' efforts to develop scientific research in her country,

which she began with the Chulabhorn Foundation.

Attendees at the ceremony, held in the Lawton Chiles International House (Stone House), included the Thai ambassador, M.L. Birabhongse Kasemsri; the princess' husband, Group Capt. Sutee Buranasin; Dr. Ken Bernard, Office of International Health, PHS; Drs. Jay Moskowitz, John Diggs, Vivian Pinn and Jack Whitescarver of the OD staff; Dr. James Hill of NIAID; Dr. Samuel Broder, NCI director; and Dr. Philip Schambra, FIC director. □

Identical, Fraternal Twins Sought

NIMH needs twins for a study of brain function. Volunteers must be between ages 18 and 80, be taking no medications, and have no history of major medical or psychiatric illness. Procedure involves mapping brain structure with magnetic resonance imaging (MRI), and mapping brain function with positron emission tomography (PET) while subjects perform various problem-solving tests. The PET scan involves exposure to approximately the same amount of radiation as a routine x-ray, an amount well within NIH and FDA guidelines. Volunteers will be paid. For information contact Jill Ostrem or Dr. Karen Berman, 496-5675. □

WOMEN

(Continued from Page 1)

tution was represented at the workshop by a member of its committee to recruit, retain or facilitate the re-entry of women. In fact, attendance exceeded ORWH expectations and additional accommodations were arranged midway through the opening morning session.

About 300 participants were expected during the preregistration period; nearly 100 more onsite registrants signed on in the last 3 days before the event, according to conference organizers.

One reason given for the overwhelming response to what Pinn admitted were hurriedly dispatched invitations was the political climate and the seemingly shared sense among women that 1992 is "the year of women." Only about 4 months passed between planning of the workshop to the event, necessitating an efficient coordination of schedules and activities. Pinn thanked participants and planners for responding so quickly and fully.

"Far too many women students continue to be taught by individuals who don't welcome women into the sciences, who really still doubt that women can do science."

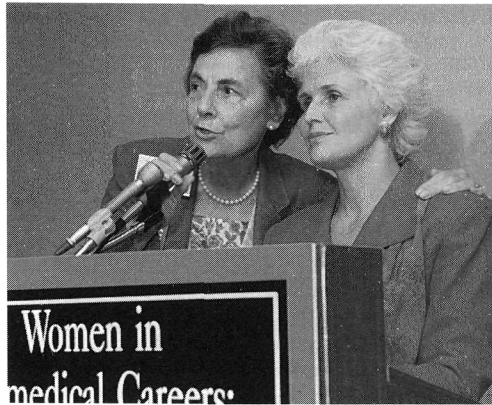
"The time is ripe," she said, quoting a phrase often used by NIH director Dr. Bernadine Healy during her speeches on women's health. "There is an awakening. Seeing so many of you out there is a dream come true."

Healy reiterated what could have been the subtitle of the workshop. "The time is right for women to be recognized as leaders in science and in every other field of endeavor," she said. "The complex nature of science in the 21st century demands the energies and resources of a diverse talent base—one that includes legions of women who are prepared to take scientific challenges."

Hailed upon her arrival much as a conquering heroine, Healy was given a standing ovation following her address. From her enthusiastic reception, it was evident she is seen by prominent women nationwide as one who has overcome major barriers and virtually opened the floodgates for women everywhere.

Another speaker put the session in perspective.

"This meeting is unique, but it is no accident," said Dr. Carola Eisenberg, director of International Programs for Medical Students at Harvard Medical School and cochair of the



Workshop cochair Dr. Carola Eisenberg (l) of Harvard Medical School and Dr. Judith LaRosa, deputy director of NIH's Office of Research on Women's Health, teamed up to address recruitment, retention and re-entry of women in biomedical science.

workshop planning task force. "It is happening for the first time because a woman, an outstanding woman, Bernadine Healy, is the director of the National Institutes of Health."

Another soldier on the battlefield was acknowledged as well. A longstanding leader and promoter of women's health issues, Dr. Ruth Kirschstein, the first and as yet only woman director of an NIH institute, said after 18 years in the position, she still often finds herself as the only woman in meetings of NIH policymakers.

But, citing the appointments of Healy and Pinn, Eisenberg told Kirschstein that a posse is on the way. "Ruth has been fighting for women for many years," she said, "and now she's not alone."

Eisenberg also gave a little history lesson to the assembly, telling how formerly all-male Johns Hopkins medical school reluctantly first admitted women to its program in 1893. Facing a severe economic deficit in the school budget, Hopkins trustees, with distinct regret, accepted a half million dollar proposal by four Quaker women: Admit women on the same terms as men in exchange for an endowment generous enough to open the school on time.

Applying the Quaker philosophy to today's struggle for parity in tenure and top scientific appointments, Eisenberg said that search committees "acting in good faith" would be amazed by the number of qualified applicants who are also women. But what will suddenly give rise to the necessary good faith?

"The same recipe used to such good effect a century ago," she said, "endowment funds on the one hand and formal stipulations on the other . . . We are not here to exchange war stories. We are here to work for change. Our assignment is to identify what works and what might work if given half a chance."

Sharing a model of what worked recently at Yale University's school of arts and sciences, Dr. Linda Bartoshuk, professor of surgery at Yale's medical school, gave an example of Eisenberg's theory.

In the mid-1980's, Bartoshuk explained, Yale reviewed the representational makeup of its faculty and found what probably most every other major university in the country would find: women are far too scarce in professorships, tenured positions and other top policymaking roles.

Several Yale committees were charged with addressing the problem and several solutions were suggested: Invitations to the university were extended to distinguished women academicians, who were then made more visible in campus affairs. Department chairs were made to discuss with the provost the career status and prospects of every nontenured woman within their jurisdiction. Childcare facilities and employment opportunities for spouses were improved.

One committee was bolder than the rest, though. It dared to ask for quantified results, demanding in 1984 that the number of tenured women double by 1990.

"Nobody had ever said anything like that before," Bartoshuk said. "And nobody believed for a minute that anybody would do anything about it."

What made that committee's suggestion work where others had not was simple economics: Yale's president, showing a commitment to the effort from the top, put his money where his mouth was. He allotted posi-

Speakers Set for June 25 Forum on Women in Biomedicine at NIH

Speakers have been confirmed for the June 25 forum "Creative Models and Alternative Pathways for Scientific Careers" sponsored by NIH's committee on the status of intramural women scientists. Scheduled for noon in Lipsett Amphitheater, Bldg. 10, this first of a two-part series on integrating maternity/parenthood/caregiving duties with the responsibilities and requirements of a scientific career will feature Marvene Horwitz, assistant direc-

tor for personnel services in NIH's Division of Personnel Management; Dr. Arthur Levine, NICHD scientific director; and Janet Bickel, assistant vice-president for women's programs at the Association of American Medical Colleges. The three will discuss various regulations, approaches and strategies for such issues as flextime, job-sharing and tenure-track timing flexibility. Open discussion will follow.

tion slots and funds to the provost, who then offered the powerful incentives to department chairs. The numbers of tenured women at Yale surged, meeting its goal a year early.

Dr. Shirley McBay, president of the Quality Education for Minorities Network in Washington, D.C., asserted that a great deal of the nonparity of women in science careers stems from an attitude cultivated at many educational institutions.

"Far too many women students continue to be taught by individuals who don't welcome women into the sciences, who really still doubt that women can do science," she said. "Seems to me, there really isn't a big mystery about what it takes to increase the participation of girls and women in the sciences."

Consensus of the speakers seemed to be that, not so surprisingly, attitudes can be conquered with well-placed political pressure and well-spent economic power.

"Achieving excellence demands all the talent universities can find," concluded Eisenberg. "Ignoring the talents of half the human race assures mediocrity."

Referring to the recent show of political strength by women politicians and women's support groups, she challenged the audience to change the status quo.

"There is a tidal wave out there," she said. "Women made that tidal wave. What we have accomplished in politics, we can do also in scientific research. Ladies, get out your surf boards. We are going to ride that tidal wave until gender is no longer a criterion for any job except being a mother." □

Bioethics Lectures Continue

The Bioethics Lecture Series continues on June 26 with a presentation on "Tradition vs. Experience: Moral Tensions for Clinical and Research Physicians," at 12:30 p.m. in Masur Auditorium, Bldg. 10. The hour-long talk will be given by Dr. Warren T. Reich, professor in the department of community and family medicine, Georgetown University School of Medicine. NIH staff and members of the local community are invited to attend. □

Host Families Sought for Japanese Medical Students

Host families are being sought for three medical students from Kyoto University in Japan who will be spending a 2-month elective research rotation in laboratories of the National Cancer Institute this summer and fall.

Dr. Kenneth H. Kraemer of the Laboratory of Molecular Carcinogenesis has arranged for Dr. Charles Evans of the Laboratory of Biology, Dr. Dolph Hatfield of the Laboratory of Experimental Carcinogenesis and Dr. Yves Pommier of the Laboratory of Molecular Phar-

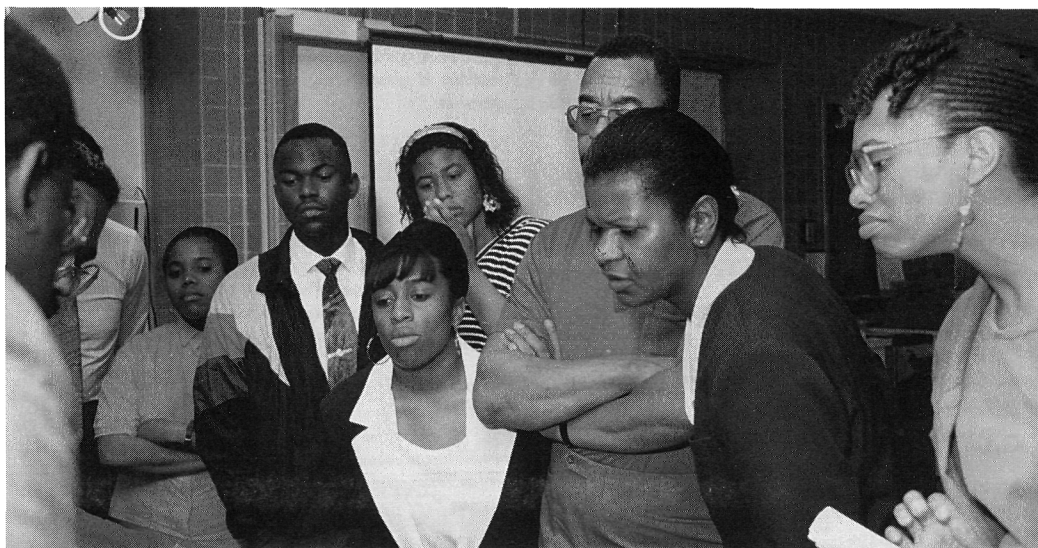
NCI Welcomes Teens, Teachers from McKinley High School

The National Cancer Institute recently hosted a tour to welcome students and teachers from McKinley High School, who have been awarded summer internships as part of the Adopt-A-School partnership between NCI and the school. The eight program participants and members of the Adopt-A-School subcommittee of the NCI EEO advisory group were given a tour of the laboratories of Dr. Lance A. Liotta, chief of NCI's Laboratory of Pathology. During the tour, members of his staff gave a slide presentation on the pathology of various types of cancers.

Dr. Daniel C. Ihde, NCI deputy director, Dr. Edward Sondik, deputy director of the Division of Cancer Prevention and Control; and Dr. Alan Rabson, director of the Division of Cancer Biology, Diagnosis and Centers, welcomed the McKinley High participants and emphasized the importance of the relationship between the institute and this D.C. inner-city high school. Maxine Richardson, NCI's EEO officer, introduced the students and teachers to their NCI and NIH mentors with whom they will work during the summer.

Participants in the NCI/MHS partnership programs have accepted assignments in either scientific or administration areas of NCI and NIH, including intramural laboratories and areas responsible for communications and administrative support functions. A poster day and lecture session are planned upon completion of the 8-week internship to give participants an opportunity to share their experiences and accomplishments with the NIH community.

The partnership between NCI and McKinley began in 1989 with the purpose of attracting minority students to scientific careers. By sponsoring students and teachers from the school to work in NCI laboratories and administrative areas to learn about biomedical research first hand, the institute hopes to increase the numbers of minority students pursuing biomedical science careers. In 1991, NCI expanded the program to include a summer internship for teachers at MHS to increase their opportunities for professional development.



Participants in the NCI Adopt-A-School program tour an institute laboratory. They include McKinley High students (from l) Nicole Smith, Nicholas Inness, Cberia Johnson and Shameka Price; and teachers Woodson Davis, Juanita Cribb-Wade, and Judi Jones.

macology to host Satoshi Horiguchi, Hirohide Takebayashi and Takeshi Morimoto. This exchange is an outgrowth of a 3-month stay of a Kyoto University student in Kraemer's laboratory in 1990 and the visit of three students last summer.

Dr. Michael Fordis, director of the NIH Office of Education, said the visit of three students last summer "was very successful. We are hopeful that this year's visit means we have established a long-term relationship with Kyoto University's faculty of medicine."

While the primary purpose of the students' visit is to provide them with an opportunity to be engaged in a research project, the students hope to become familiar with the American way of life by living with a family. These young men are responsible for the funding of their visit; reimbursement of host families for room and board will be made. Families living close to NIH are preferred as the students will have no transportation of their own. If interested, call Kraemer, 496-9033, as soon as possible. □

NIH Honors Employees for Outstanding Achievements

NIH director Dr. Bernadine Healy will recognize the outstanding accomplishments of the following staff members at the 1992 Annual NIH Honor Awards Ceremony. It will be held at 1:30 p.m. on Tuesday, June 30, in Masur Auditorium, Bldg. 10. All NIH employees are invited to attend.

NIH DIRECTOR'S AWARDS

CLINICAL CENTER

Dr. Naomi L. Gerber

Chief, Department of Rehabilitation Medicine

"In recognition of outstanding leadership of the Clinical Center Department of Rehabilitation Medicine and as Chair, Office of Research Services Advisory Committee."

Dr. David K. Henderson

Associate Director for Quality Assurance and Hospital Epidemiology

"In recognition of superb scientific, advisory, and educational contributions to the difficult public health issues of human immunodeficiency virus infection and healthcare workers."

DIVISION OF RESEARCH GRANTS

Group Award

Barbara Wassell

Management Analyst

Referral and Review Branch

Dr. Nathan Watzman

Chief, Clinical Sciences Review Section

Referral and Review Branch

"For persistent and dedicated service in providing leadership and guidance to assure the timely revision of the research grant application kit."

Dr. Raymond Bahor

Associate Chief

Referral and Review Branch

"For your outstanding contributions to the mission of the National Institutes of Health and effective assistance to national and international health organizations."

FOGARTY INTERNATIONAL CENTER

Stephanie J. Bursenos

Assistant Director for Program Coordination

Office of the Director

"In recognition of exceptional service in coordinating the international programs of the Fogarty International Center and facilitating the international activities of the NIH."

NATIONAL CANCER INSTITUTE

Dr. Michael I. Lerman

Research Chemist

Laboratory of Immunology

"In recognition of contributions to the isolation of human tumor suppressor genes and to human genome mapping."

Dr. Hiroaki Mitsuya

Head, Experimental Retrovirology Section

Medicine Branch

"For your important discoveries relating to infection with the human immunodeficiency virus and its therapy."

Dr. James M. Sontag

Special Assistant for Epidemiology and Biostatistics

Division of Cancer Etiology

"In recognition of superior service in advancing the NIH's goals of ensuring that women and minorities are appropriately represented in biomedical research."

Dr. Robert E. Tarone

Mathematical Statistician

Biostatistics Branch

"For sustained excellence in developing statistical methods for biomedical research and providing statistical consulting services of exceptional quality to scientists in a variety of disciplines."

NATIONAL CENTER FOR HUMAN GENOME RESEARCH

Dr. Mark S. Guyer

Assistant Director for Program Coordination

"In recognition of significant accomplishments in the establishment and scientific coordination of NCHGR research programs at the national and international level."

Alice H. Thomas

Chief, Grants and Contracts Section

"In recognition of exemplary leadership, flexibility, and creativity in grants management administration, practices and approaches."

NATIONAL CENTER FOR RESEARCH RESOURCES

Linda J. Brown

Chief, Design Section

Medical Arts and Photography Branch

"For your sustained excellence using innovative and unique techniques of graphics design, for scientific and administrative visual presentations in support of the NIH research effort."

Thomas E. Ingalls

Program Analyst

"In recognition of dedication, commitment, and expert administrative counsel while assisting with the successful reorganization and revitalization of the Veterinary Resources Program."

Dr. Courtney P. Mudd

Biomedical Engineer

Applied Clinical Engineering Section

"In recognition of innovative engineering contributions to the NIH Intramural Research Program and collaborative, creative, approach to resolving basic and clinical research problems."

NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

Nancy D. Ernst

Nutrition Coordinator

Division of Epidemiology and Clinical Applications

"For your superior achievement as Nutrition Coordinator, NHLBI, in effectively organizing the diverse nutritional activities of the Institute through dedication and consistently exceptional performance."

Dr. James P. Kiley

Health Scientist Administrator

Airways Diseases Branch

"In recognition of excellent leadership in managing and directing the programs of the Airways Diseases Branch, Division of Lung Diseases, NHLBI."

Dr. Paul R. McCurdy

Chief, Bone Marrow Transplantation Branch

Division of Blood Diseases and Resources

"In recognition of superb and innovative leadership in the scientific management of the National Marrow Donor Program for the National Heart, Lung, and Blood Institute."

Dr. Lance R. Pohl

Chief, Section of Pharmacological Chemistry

Laboratory of Chemical Pharmacology

"In recognition of characterization of neoantigens associated with halothane-induced hepato-toxicity and their use in developing a method for identifying sensitive individuals."

Dr. David M. Robinson

Associate Director for Scientific Programs

Division of Heart and Vascular Diseases

"In recognition of exceptional performance in managing and developing National Heart, Lung, and Blood Institute Extramural Research Programs."

NATIONAL INSTITUTE ON AGING

Karyn Ross

Chief, Financial Management and Information

Systems Branch

Office of Administrative Management

"For your significant contributions and expert advice on financial management and information systems management for the National Institute on Aging."

NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES

Dr. Mark D. Challberg

Chief, Macromolecular Biology Section

Laboratory of Viral Diseases

"For your discovery, identification and characterization of the seven viral genes required for replication of the DNA of herpes simplex virus, a persistent human pathogen."

Dr. Carole A. Heilman

Chief, Respiratory Diseases Branch

Division of Microbiology and Infectious Diseases

"For your consistent outstanding efforts to advance the development of new influenza vaccines."

Dr. Gary S. Hoffman

Chief, Vasculitis and Related Diseases Section

Laboratory of Immunoregulation

"In recognition of critical work in the development of improved protocols for the treatment of the vasculitic syndromes."

Dr. Eric O. Long

Visiting Scientist
Molecular Immunology Section

"For your studies of exceptional insight that elucidated mechanisms used by the immune system to recognize microbial antigens."

Group Award

Dr. Frederick Batzold

Health Scientist Administrator
Clinical Research Management Branch

Anita Fladell

Lead Grants Technical Assistant
Scientific Review Branch

Chelton Gibbs

Secretary (Typing)
Scientific Review Branch

Dr. Hortencia Hornbeak

Supervisory Health Scientist Administrator
Scientific Review Branch

Mary Kirker

Supervisory Grants Management Specialist
Grants Management Branch

Dr. Olivia Preble

Supervisory Health Scientist Administrator
Scientific Review Branch

Dr. Allen Stoolmiller

Health Scientist Administrator
Scientific Review Branch

Dr. Dianne Tingley

Health Scientist Administrator
Scientific Review Branch

Jane Unsworth

Supervisory Grants Management Specialist
Grants Management Branch

"For sustained performance of extraordinary efforts in outstanding reviews of vital components of an integrated clinical research program, the AIDS Clinical Trials Units."

NATIONAL INSTITUTE OF ARTHRITIS AND MUSCULOSKELETAL AND SKIN DISEASES

Carolyn G. McHale

Chief, Scientific Information and Data Systems
Office of Administrative Management

"For your extraordinary skill, leadership and dedication in establishing comprehensive, high quality data management systems for both the NIAMS and the NIH."

NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

Hallie K. Boone

Purchasing Agent (Typing)
Office of Administrative Management

"In recognition of dedicated and effective service in support of staff and programs of the National Institute of Child Health and Human Development."

Joan P. McDonald

Secretary
Center for Population Research

"For your continuing excellence and diligence in providing and assuring administrative support services to the Center for Population Research."

Dr. Ida S. Owens

Research Biologist
Human Genetics Branch

"For exceptional contributions to our understanding of glucuronosyltransferase genes, with particular regard to their functions in bilirubin metabolism."

Group Award

Anne K. Blank

Writer-Editor
Office of Research Reporting

Robert A. Bock

Writer-Editor
Office of Research Reporting

Ruth R. Dubois

Writer-Editor
Office of Research Reporting

Carol M. Florance

Public Affairs Specialist
Office of Research Reporting

Marie S. Hamilton

Secretary (Typing)
Office of Research Reporting

Marsha S. Love

Public Affairs Specialist
Office of Research Reporting

Michaela P. Richardson

Chief
Office of Research Reporting

"For exceptional achievement in public information activities supporting research programs of the National Institute of Child Health and Human Development."

Richard A. Wagner

Chief, Contracts Management Branch
Office of Grants and Contracts

"For dedicated effort and professional leadership of contracts management operations supporting scientific programs of the National Institute of Child Health and Human Development."

NATIONAL INSTITUTE OF DENTAL RESEARCH

Dr. Maryann Ruda

Chief, Section on Cellular and Molecular Mechanisms

Neurobiology and Anesthesiology Branch

"In recognition of outstanding innovative research on molecular and chemical changes in the nervous system associated with tissue and nerve injury."

Dr. Dennis A. Torchia

Research Physicist
Bone Research Branch

"In recognition of exceptional research in the development of NMR methods to study structures of macromolecules."

NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES

Group Award

Dr. Ad Bax

Chief, Biophysical Nuclear Magnetic Resonance Spectroscopy Section
Laboratory of Chemical Physics

Dr. G. Marius Clore

Chief, Protein Nuclear Magnetic Resonance Section
Laboratory of Chemical Physics

Dr. Angela M. Gronenborn

Chief, Structural Biology Section
Laboratory of Chemical Physics

"In recognition of collaboration in the best spirit of the Intramural Program to develop and apply innovative Nuclear Magnetic Resonance methods to the determination of protein structures."

Clifford Moss, Jr.

Supervisory Personnel Management Specialist
Office of Administrative Management

"For your innovation and creativity in managing the personnel program for the National Institute of Diabetes and Digestive and Kidney Diseases."

Carolyn W. Siebert

Director
Diabetes Clinical Trials Program
Diabetes Program Branch

"For your outstanding contributions and professional devotion to the successful implementation of the Diabetes Control and Complications Trial and the planning for its conclusion."

NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES

Dr. Scot L. Eustis

Head of Cancer Studies Evaluation and Reporting
Chemical Carcinogenesis Branch

"In recognition of leadership and sustained excellent performance in preparation of National Toxicology Program's Technical Reports for Toxicity and Carcinogenicity Studies."

Jean H. Gordner

Secretary (Stenography/OA)
Comparative Medicine Branch

"In recognition of sustained exemplary performance and dedication in providing comprehensive administrative support for the Comparative Medicine Branch."

Daniel C. Vandermeer

Director
Office of Program Planning and Evaluation
Office of the Director

"For your superb leadership, resourcefulness and innovative approaches in the management of the Institute's program planning and evaluation activities."

(Continued from Page 7)

NATIONAL INSTITUTE OF GENERAL MEDICAL SCIENCES

Ruth C. Monaghan

Supervisory Grants Management Specialist
Office of Program Activities

"In recognition of exceptional managerial, leadership, and interpersonal skills contributing to the successful administration of NIGMS research and training grant programs."

Janice C. Ramsden

Secretary (Stenography)
Office of the Director

"For consistent outstanding performance and invaluable contributions to the operations of the NIH Office of Research on Women's Health and to the NIGMS."

NATIONAL INSTITUTE OF NEUROLOGICAL DISORDERS AND STROKE

Dr. Mary A. Foulkes

Chief, Collaborative Studies Section

"In recognition of outstanding efforts in applying sound statistical methods in the scientific direction of the NINDS Stroke and Traumatic Coma Data Banks."

Dr. Carl M. Leventhal

Director, Division of Demyelinating, Atrophic, and Dementing Disorders

"For exceptional career service displaying unique scientific and managerial skills in directing a multidisciplinary research program in disorders of the nervous system."

Dr. Karin B. Nelson

Medical Officer
Neuroepidemiology Branch

"In recognition of exemplary and innovative research studies in the field of Childhood and Developmental Neuro-epidemiology."

Dr. Eugene Streicher

Director
Division of Fundamental Neurosciences

"For sustained superior performance in the management of a diverse research program in the fundamental neurosciences."

Dr. Richard J. Youle

Chief, Biochemistry Section
Surgical Neurology Branch

"In recognition of scientific achievements leading to new approaches in drug design and disease therapies and leadership of the Biochemistry Section, Surgical Neurology Branch, NINDS."

NATIONAL LIBRARY OF MEDICINE

Bruno M. Vasta

Chief, Biomedical Files Implementation Branch
Division of Specialized Information Services

"In recognition of leadership, creativity and vision in building and reconfiguring TOXNET into a microprocessor system providing valuable toxicological information to the biomedical community."

OFFICE OF THE DIRECTOR

Reid G. Adler

Director
Office of Technology Transfer
Office of Intramural Research

"In recognition of outstanding administration of the newly integrated patent, licensing and marketing operation in the Office of Technology Transfer."

Arlene M. Bowles

Program Director
Staff Training in Extramural Programs
Extramural Staff Training Office

"In recognition of the highest standards of performance and leadership in developing and implementing administrative training for NIH extramural staff."

F. Anthony Clifford

Deputy Director
Division of Engineering Services

"In recognition of leadership of the NIH facilities programs during an exceedingly difficult period as Acting Director for the Division of Engineering Services."

Rita M. Koch

Supervisory Budget Analyst
Division of Financial Management

"In recognition of exceptional creativity, initiative, and leadership in providing a quality budgetary submission for NIH during an unusually critical period in the budgetary process."

Helen M. Lourim

Management Analyst
Division of Engineering Services

"In recognition of outstanding contributions via her efficient management skills in coordinating the NIH initiative to achieve AAALAC accreditation for NIH Intramural Animal Facilities."

Dr. Robert W. McKinney

Safety and Occupational Health Manager
Division of Safety

"In recognition of leadership and initiative in science and management to assure a safe and effective biomedical research environment."

Sue Ohata

Special Assistant to the Associate Director for
Extramural Affairs
Office of Extramural Research

"For your sustained superior performance serving as an exceptionally able advisor to the office and for implementation of the Shannon Award program."

Karen P. O'Steen

Director
NIH Executive Secretariat
Office of the Director

"In recognition of transforming the NIH Executive Secretariat into a leader of correspondence management and consistently assuring the Director's correspondence is of the highest quality."

Retha M. Peeples

Motor Vehicle Operator Foreman
Transportation Branch

"In recognition of exemplary dedication in providing motor pool services to the NIH community."

Dr. Alan R. Price

Senior Scientist
Office of Scientific Integrity

"For your extraordinary efforts in developing policies and implementing a new management and reporting system for the first Institutional Annual Reports on Scientific Misconduct for OSI, OD, NIH."

Patricia A. Ruben

Supervisory General Supply Specialist
Division of Logistics

"For your exemplary achievements and dedication to successfully reconciling the NIH physical inventory of personal property."

David W. Snight

Chief, Research Contracts Branch
Division of Contracts and Grants

"In recognition of outstanding leadership, resourcefulness, and significant contributions in managing the Research Contracts Branch of the Division of Contracts and Grants, Office of the Director, National Institutes of Health."

Milton E. Timmons

Supervisory Contract Specialist
Division of Procurement Acquisitions Branch C

"In recognition of professionalism and resourcefulness in the acquisition of Buildings 29B, 5, and the Natcher Building Complex Design Award for the National Institutes of Health."

George B. Williams

Assistant Director for Infrastructure
Division of Engineering Services

"For excellence in leadership, program development, and the application of engineering principles in managing the NIH/Clinical Center Complex Infrastructure Improvement and Modernization Program."

Group Award

Carol Bleakley

Computer Systems Analyst
Division of Research Grants

Dr. Norman Braveman

Chief, Planning and Policy Research Branch
Division of Planning and Evaluation

Geoffrey Grant

Director
Grants Policy Office

Joellen Harper

Grants Management Specialist
Grants Policy Office

Herbert Kreitman

Assistant Grants Policy Officer
Grants Policy Office

Ruth Loveless

Computer Systems Analyst
Information Systems Branch
Division of Research Grants

Bonnie McKenzie

Secretary (Stenography)

Robert Moore

Chief, Special Projects and Presentation Unit
Division of Research Grants

Richard Powers
Supervisory Staff Accountant

Dr. James Schuttinga
Economist
Economics and Resource Study Branch

Dorrette Worrell
Supervisory Program Analyst
Information Systems Branch
Division of Research Grants
"In recognition of superb collaborative effort in collecting and analyzing indirect costs as well as proposing suggestions for future policy directions."

COMMISSIONED CORPS OUTSTANDING SERVICE MEDAL

CLINICAL CENTER

Capt. Thomas A. Fleisher
Chief, Immunology Service
Clinical Pathology Department
Immunology Service
"For recognition of outstanding service in the area of diagnostic/clinical immunology that has enhanced patient care and advanced the clinical research mission of NIH."

Capt. Lorraine A. Maciag
Executive Assistant to Associate Director for Nursing
"For accomplishments and sustained effort in support of Nursing Department, Clinical Center, and Commissioned Corps Projects."

NATIONAL CANCER INSTITUTE

Capt. Michael C. R. Alavanja
Special Assistant for Epidemiology and Biostatistics
Office of the Associate Director for Epidemiology and Biostatistics, DCE
"For internationally recognized contributions to quantitative risk assessment strategies to improve cancer risk estimates from exposure to environmental carcinogens."

Capt. Gregory A. Curt
Associate Director
Clinical Oncology Program
Clinical Director
"For astute leadership of the Clinical Oncology Program, the foremost testing ground for gene therapy, AIDS antivirals, and new chemical agents against cancer."

Capt. Ernest Hamel
Senior Investigator
Laboratory of Molecular Pharmacology
"For identification of novel, potent natural products (combretastatins, dolastatins, halichondrins) as antimetabolic agents with clinical promise as antineoplastic drugs and elucidation of mechanism of action."

Capt. Dan L. Longo
Associate Director
Biological Response Modifiers Program
"For outstanding leadership of the Biological Response Modifiers Program, revitalizing the clinical research effort, and developing a premier basic research component complementing the clinical program."

Capt. Joseph A. Tangrea
Deputy Chief
Cancer Prevention Studies Branch
Division of Cancer Prevention and Control
"For sustained outstanding effort and leadership in the planning, organization, implementation and management of health care and scientific programs at the National Institutes of Health."

NATIONAL CENTER FOR RESEARCH RESOURCES

Capt. John D. Bacher
Chief
Surgery, Radiology and Pharmacy Section
Scientific Services
Veterinary Resources Program
"For exemplary service in the fields of comparative surgery and radiology and expertise in design and management of state-of-the-art experimental surgery and radiology facilities."

Cdr. Robert L. Carolan
Chief
Research Animal Branch
Veterinary Resources Program
"For outstanding dedication to duty and for his efforts in the design and construction of the Animal Facility, Child Health and Neurosciences Building, NIH."

NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

Cdr. Richard O. Cannon, III
Chief
Cardiac Catheterization Section
Cardiology Branch
Division of Intramural Research
"For superb skills as a clinical and invasive cardiologist and contributions to the understanding of Syndrome X."

Capt. Jeffrey A. Cutler
Chief
Prevention and Demonstration Research Branch
Division of Epidemiology and Clinical Applications
"For continued extraordinary contributions to the well-being of the nation and to the advancement of PHS objectives through numerous programs in cardiovascular disease prevention."

Capt. Carl A. Roth
Deputy Director
Office of Program Planning and Evaluation
"For outstanding achievements in program analysis and evaluation that have benefitted the National Heart, Lung, and Blood Institute."

NATIONAL INSTITUTE ON AGING

Capt. Gene D. Cohen
Deputy Director
National Institute on Aging
"For outstanding contributions to the leadership of the National Institute on Aging and to the advancement of the entire field of aging-related research."

NATIONAL INSTITUTE OF ALLERGY AND INFECTIOUS DISEASES

Capt. George T. Curlin
Deputy Director
Division of Microbiology and Infectious Diseases
"For outstanding leadership in meeting the NIAID and PHS objectives in testing candidate acellular pertussis vaccines and initiating a clinical trial to evaluate their efficacy."

Capt. Robert W. Gwadz
Head
Medical Entomology Unit
"For establishing framework for extraordinary cooperation between Egypt and Israel on important vector-borne diseases of the region."

NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

Capt. Gilman D. Grave
Chief
Endocrinology, Nutrition and Growth Branch
"For strengthening the rigor of the scientific review of research projects involving human subjects as Chairman of the NICHD Clinical Research."

NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES

Capt. John M. Rinzel
Chief
Mathematical Research Branch
"For initiating and successfully communicating important advances in the application of mathematics and computation to complex physiological systems."

NATIONAL INSTITUTE OF NEUROLOGICAL DISORDERS AND STROKE

Cdr. Norman W. Barton
Chief
Clinical Care Unit
"Developed first successful enzyme replacement trial for hereditary lipid storage disorders."

Capt. Paul W. Brown
Senior Investigator
Laboratory of Central Nervous System Studies
"For research on elucidating the etiology of transmissible dementias and identification of point mutations in familial Creutzfeldt-Jakob disease and Gerstmann-Straussler-Scheinker syndrome."

Capt. James J. Cereghino
Branch Chief
Epilepsy Branch
Division of Convulsive, Developmental, and Neuromuscular Disorders
"For outstanding service in directing a national program of grant supported research in epilepsy and a contract supported program on antiepileptic drug development."

OFFICE OF THE DIRECTOR

Capt. Alan L. Sandler
Deputy Director
Office for Protection from Research Risks
"For exceptional leadership ability in directing programs and activities of the Office for Protection from Research Risks to protect both human and animal research subjects."

COMMISSIONED CORPS OUTSTANDING UNIT CITATION

CLINICAL CENTER
12 East Cancer Day Hospital, Cancer Service, Clinical Center

Lt. Laura M. Chisholm
Cdr. Jean F. Jenkins

(Continued from Page 9)

Lcdr. Jeanne M. Odom
Lcdr. Daniel A. Sands

"For outstanding contributions and performance in the establishment of the 12 East Cancer Day Hospital (CDH), a new and innovative care unit."

NATIONAL CANCER INSTITUTE

Late Effects Group

Capt. John D. Boice, Jr.
Cdr. Rochelle E. Curtis
Cdr. Mary C. Fraser
Capt. Joseph F. Fraumeni, Jr.
Capt. Robert N. Hoover
Lcdr. Lois B. Travis
Cdr. Margaret A. Tucker

"For groundbreaking studies of late health effects following radiation and drug treatments for cancer, providing insights valuable for clinical decision-making and understanding carcinogenesis."

Drug Management and Authorization Section,
IDB

Cdr. Jonathan D. Adams
Capt. Alfred Fallavollita, Jr.
Capt. Clarence L. Fortner (Retired)
Cdr. Joseph L. High
Capt. Paul J. Vilks

"In recognition of outstanding performance and service to the nation in the implementation and resourceful management of two Group C/Treatment Protocols, for colon cancer and chronic lymphocytic leukemia."

NATIONAL INSTITUTE OF ENVIRONMENTAL HEALTH SCIENCES

Animal Care and Use Program

Lcdr. Diane E. Blackmore
Capt. John F. Dement
Lcdr. Mary F. Goelz
Cdr. Raymond G. Haire
Cdr. William S. Stokes

"For outstanding leadership and professional skills in developing a comprehensive and fully accredited animal care and use program in support of environmental health research."

OFFICE OF THE DIRECTOR

Radiation Safety Branch Health Physicists

Capt. Roger W. Broseus
Lt. Kathleen Ann T. Dolce
Capt. Ted W. Fowler
Capt. William F. Holcomb
Lcdr. Lynn Evans Jenkins
Cdr. C. Bruce Smith
Capt. Robert A. Zoon

"For outstanding and dedicated efforts to develop, manage and execute a biomedical research radiation safety program of nationally recognized excellence at the NIH."

NIH EQUAL EMPLOYMENT OPPORTUNITY OF THE YEAR AWARD

Dr. Joseph Bryant
Chief

Animal Care Unit
Intramural Research Program
National Institute of Dental Research

"For outstanding leadership in supporting, promoting, and adhering to EEO principles, serving as an exemplary Federal Administrator and role model within the NIDR/NIH Community."

HARVEY J. BULLOCK, JR. AWARD FOR EQUAL OPPORTUNITY ACHIEVEMENT

Tyrone E. Bellinger
Administrative Technician
Administrative Services Section
Office of Administrative Management
National Institute of General Medical Sciences

"For exceptional commitment, initiative, and service to the advancement of equal opportunity principles at the NIH through leadership of the Black Employees Advisory Committee."

The following awards are presented at the ICD level:

These NIH recipients were approved by the Director, NIH, to receive the PHS Commendation Medal and the Unit Commendation.

COMMENDATION MEDAL

CLINICAL CENTER

Lt. Bobby D. Lowery
Cdr. Peter Meccariello
Capt. Marsha L. Moore
Capt. Ainslie S. Pitcher

DIVISION OF RESEARCH GRANTS

Cdr. Edward C. Farley
Capt. Galen B. Warren

NATIONAL CANCER INSTITUTE

Lcdr. Demetrius Albanes
Lcdr. Patricia A. Brown
Lcdr. Michele K. Evans
Cdr. Antonio T. Fojo
Capt. Peter Greenwald
Cdr. Joseph L. High
Capt. David L. Levin
Capt. Philip R. Taylor
Cdr. Clara J. Witt

NATIONAL HEART, LUNG, AND BLOOD INSTITUTE

Cdr. Silvia M. Fojo

NATIONAL INSTITUTE ON AGING

Capt. Neil S. Buckholtz
Capt. William A. Kachadorian
Cdr. Marco A. Pineyro
Capt. Lon R. White

NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

Cdr. Joseph Kelaghan
Cdr. Joshua J. Zimmerberg

NATIONAL INSTITUTE OF DENTAL RESEARCH

Cdr. Mitchell Bruce Max

NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES

Capt. Leonard D. Kohn
Capt. Bruce D. Weintraub

NATIONAL INSTITUTE OF NEUROLOGICAL DISORDERS AND STROKE

Cdr. Henry Moore
Cdr. Gustavo C. Roman
Lcdr. Giovanna M. Spinella

OFFICE OF THE DIRECTOR

Capt. John G. Miller

UNIT COMMENDATION

CLINICAL CENTER

Cdr. Naomi C. Ballard
Lcdr. Joanne Derkak
Cdr. Carole C. Kuzmik

NATIONAL CANCER INSTITUTE

Capt. Michael C. R. Alavanja
Cdr. Linda M. Brown
Capt. Joseph F. Fraumeni, Jr.
Capt. Robert N. Hoover
Cdr. Linda M. Pottorn

NATIONAL INSTITUTE OF DENTAL RESEARCH

Capt. Stephen B. Corbin
Cdr. William G. Kohn

NATIONAL INSTITUTE OF NEUROLOGICAL DISORDERS AND STROKE

Lcdr. Lowery L. Rhodes
Lt. Helen V. Thornton
Lt. Ruth A. Woodward

OFFICE OF THE DIRECTOR

Capt. Gary L. Chadwick
Capt. Nelson L. Garnett
Capt. Melody H. Lin
Capt. John G. Miller
Capt. Alan L. Sandler
Capt. Clifford C. Scharke

Scientific Computing Resource Center To Open

By Anne P. Enright Shepherd

DCRT announces the opening of a new facility to benefit NIH biomedical researchers. The major goal of this facility, the NIH Scientific Computing Resource Center (SCRC), is to facilitate the use of advanced computational tools by NIH scientists. To this end, the SCRC project has two main interrelated components: a physical facility and a scientific support/consultation entity.

The physical facility, a new walk-in center for scientific computing, will house an array of computational tools. The facility, available for use by all members of the NIH research community, will provide access to one of the largest and most varied collections of scientific software on campus as well as a variety of specialized computer peripherals. In addition to the physical facility, the SCRC project will provide NIH scientists with expert scientific and technical support in order to maximize the benefits provided by access to the physical facility. Thus a staff of computer specialists will support users in the center, and DCRT scientists will be available to consult with SCRC visitors by appointment. Best of all, SCRC services are free to NIH scientists.

The SCRC physical facility, in Bldg. 12A, Rm. 1050, is scheduled to begin full operation by fall 1992. However, at this time DCRT would like to announce a "pre-opening" of the SCRC for the summer months, which will be kicked off by an open house on Thursday and Friday, June 25 and 26.

Try it, you'll like it

The computational resources made available through the auspices of the SCRC offer many potential benefits to its NIH clientele. Scientists who need short-term access to state-of-the-art, less commonly available, often expensive equipment will be able to use the SCRC for rarely needed but vital research analyses. The SCRC can minimize the financial risk for individual laboratories contemplating the purchase of high-end computer equipment for scientific computation. Furthermore, the SCRC will have available free and demonstration software for users to take back to their laboratories. Scientific users are encouraged to experiment with the center's variety of software and equipment, perhaps to determine what to use in their own labs for data analysis.

In addition to the technical expertise of the SCRC staff's computer specialists, DCRT scientists are available for subject-area consultations. Visitors to the SCRC can receive DCRT-wide support not only on how to use the applications but also on data interpretation. The division is home to biologists,

biochemists, biophysicists, and other researchers with expertise in, among other things, molecular graphics, computational molecular biology, sequence analysis, and medical image processing. Biomathematicians and biostatisticians are also on hand to help in the selection and interpretation of statistical computations.

"This is a major initiative for the campus," remarks Dr. David Rodbard, DCRT director. "The SCRC is intended to provide a major boost to the level of DCRT support for the NIH scientist. This is an important experiment—one that traces its origins to the input from the NIH-wide advisory committee on computer usage. This project has been in the planning stages for more than a year. We are ready to launch."

Diversity is its middle name

The hardware associated with this campus resource center reflects the diversity of computing platforms found at NIH. All high-end, computationally powerful machines, these computers will provide users access to Unix workstations as well as PCs and Macintoshes. If you visit the new center, you will find the following equipment: Unix workstations, DOS-based scientific computer systems, and Macintosh scientific computer systems.

A variety of specialized yet widely useful peripherals will be available for both novice and advanced users. These include a sonic digitizer, color scanner, color printer, CD-ROM player, slide scanner, and slide maker. There will also be a specialized Macintosh image processing workstation equipped with the Image software developed by Wayne Rasband of NIMH and featuring a high resolution CCD camera on a specially designed diffused light table that will provide uniform transillumination for quantitative measurements and densitometry.

Through high-speed network connections, SCRC users will be able to access high-performance computers not physically located in the center, such as the NIH Convex System, the DCRT Intel highly parallel supercomputer, the NIH IBM System 370 (mainframe), and the Cray supercomputing facility in Frederick. Network connections will also allow users to ask SCRC and DCRT staff questions via electronic mail and to get better insights into how networking can benefit research efforts.

Dozens of scientific software packages coupled with one-on-one assistance will make it fairly simple for scientists to sit down with in-progress research and do analyses they could not do in their own labs. Again, the try-

before-you-buy option will make exploring new applications risk free. The SCRC will have a large number of software packages available, including programs for graphing, image processing, sequence analysis, mathematics, and statistics.

The center will also stock an assortment of productivity software—word processors, spreadsheets, graphics packages—valuable to every researcher. Since scientists use these tools differently than do other NIH'ers, the SCRC's support will reflect that difference. Programs intended to assist researchers in the presentation of data via manuscripts, slides, and posters will also be in the SCRC. Preparing manuscripts is substantially easier with bibliographic management software, including access to weekly updates of Medline entries. Also, to help polish the presentation of new-found data, the SCRC offers a variety of drawing, graphing, desktop-presentation, and slidemaking tools.

Anyone who would like to suggest the addition of a particular piece of software or hardware to the SCRC's selection may contact a staffer, 402-3488. In most cases, such equipment will be added following an evaluation period.

DCRT wants researcher input

Although the SCRC is similar in its design to the successful NIH User Resource Center located in Bldg. 31, the two differ in their primary focus. SCRC staffers, who pledge their primary support to scientific computing, want researchers to discover and use the tools that can make biomedical research more effective. They will be making an effort to respond directly to the changing needs of researchers. Especially during the SCRC's preliminary phase, feedback from users will be critical.

"The key to the SCRC is its support," notes David Songco, SCRC coordinator. "The staff will listen to you about your research, your computing, the projects you're planning—and how you think the SCRC can help."

The new home for scientific computing resources is meant to nurture productivity, with its totally renovated work area, shelves of documentation, and reading and consultation area.

The facility will be open 8:30 a.m. to 4:30 p.m. beginning Monday, June 29. To help launch this new venture the SCRC staff invites all NIH personnel to an open house Thursday and Friday, June 25-26, from 10 a.m. to 3 p.m. For more information call 402-3488. □

SEQUENCES

(Continued from Page 1)

sitting down at a keyboard and typing straightforward queries. Graphics tools have also been developed that allow researchers to visualize the relationships between chromosome features; that is, relationships between specific chemical patterns, between specific chromosome structures, or between patterns and structures.

Recently, DCRT and Argonne National Laboratory cosponsored a seminar at NIH on advanced database tools for genome analysis. At the seminar, collaborator Dr. Ross Overbeek remarked that the ultimate goal of the project is to create sophisticated sequence analysis tools that are easy for the laboratory biologist to use. "We want to get the computer scientist out from between the biologist and his data, and still allow for a rich set of queries," he commented.

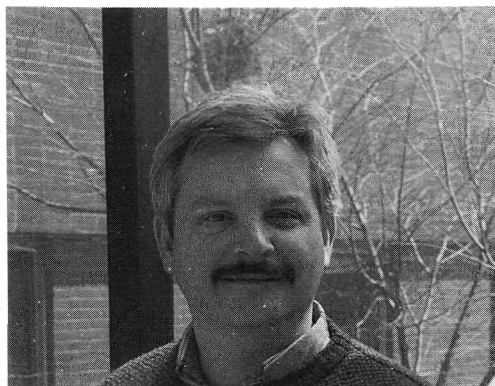
The first tool created by the development group was a query program for genetic data on the *Escherichia coli* bacterium. *E. coli* was a good place to start because a wealth of information has been uncovered about the genetic material of this tiny organism: researchers have sequenced 40 percent of its single chromosome and have located virtually all of the genes that reside in that 40 percent. Dr. Ken Rudd of the National Center for Biotechnology Information at the National Library of Medicine has developed an extensive information resource for the *E. coli* genome—including physical map, genetic map, and sequence data. The value of the resource is widely recognized and its comprehensiveness and structure have spawned a number of retrieval and analysis systems.

Michaels and Rudd worked together to reformat the *E. coli* data so that it was accessible to the specialized logic programming language Prolog, which was used to write the prototype query program.

While the language has inherent qualities that make it useful in database programming, Prolog's complexity makes its use difficult even for those familiar with conventional programming languages. To address this problem, Overbeek wrote a natural language interface for the query program. The interface allows biologists with little computer expertise to analyze chromosomes by typing in simple questions.

"The Prolog program allows us to answer questions that you can't even begin to ask in other systems," says Michaels. For example, a scientist could ask where hairpins (a common DNA structural feature) occur relative to a specific sequence feature on a chromosome, or what is the longest hairpin that occurs between any two genes.

Like other tools already available, the program can perform "motif searches," which



Dr. George Michaels (DCRT-NICHD) provides the biologist's perspective needed to make the genome analysis software relevant to current laboratory research.

allow scientists to specify that they want to find every region on a chromosome that begins with a certain bit of sequence and ends with another certain bit of sequence. The Prolog software can even handle more unusual types of questions. If a scientist wants to look 150 bases up- or downstream from any gene or motif for a common structural feature, the software can find the right spot and scan for that feature. This is known as a "regional" motif search.

Previously, asking such innovative questions meant piping data and lists through several different software packages. It took a lot of computer savvy to choreograph the information from one program to the next. Often, filter programs had to be written to make the data readable by the different programs being used. "I'm not saying it's simple now, by any means, or that we've developed a general tool for a casual molecular biologist to use. On the other hand, we can clearly do things that you can't do other ways unless you want to hire a

programmer and spend a long time to program," Michaels commented.

The query software is more powerful and versatile than what currently exists for sequence analysis. "We can easily do the things that MacVector or GCG do, but we go beyond that," says Michaels. "We pick up where those packages leave off." He adds that if a scientist develops a question that the software can't answer, the functionality to address that question can easily be written into the program.

Encouraged by their success with the *E. coli* prototype, the collaborators next worked to develop an analysis system that would work with any large DNA sequence. The resulting Prolog-based system written by Overbeek also has a natural language interface, but has more enhanced query capabilities and creates files that can be used with companion graphics programs.

Group members refer to the simplest of these graphics programs as a "quick-and-dirty graphic visualizer." Instead of presenting a user with a table of numbers, the graphic visualizer displays sequence information as color maps that make it easier to understand the spatial arrangement of different sites. In his remarks at the recent seminar, Argonne's Dr. Ray Hagstrom stated that graphics "facilitate human interaction with the database." Explaining that "many scientists are visual thinkers," he went on to argue that when you augment the textual information that the query programs provide with graphic information, scientists can think about their data on a new level.

The most spectacular pieces of software to come out of the project so far are Genographics and PC Genographics, combined query/graphic display programs written by Hagstrom, along with Argonne's Morgan



Dr. Ross Overbeek (c) speaks with scientists from NLM, DOE, DCRT, and elsewhere during an informal working session at the recent DCRT/Argonne National Laboratory seminar on advanced database tools for genome analysis.

Price and David Zawada. While all the query programs are designed to work on a SUN workstation (as was the first version of Genographics), the more advanced PC Genographics will run on any DOS-based personal computer or clone. This means scientists don't have to own an expensive workstation to make use of it. PC Genographics has many of the indepth analysis features present in the powerful query-only programs, and it also allows for the display of multiple chromosome maps. Unlike most other genetic analysis software, Genographics works with an entire genome's worth of information. Consequently, scientists can concentrate on genome-specific as well as regional questions.

Information made available to the Johns Hopkins Genome Data Base is viewable on this system, so researchers have access to the human and *E. coli* chromosomes. Work is also under way to incorporate genetic information from other organisms. Scientists from London's Imperial Cancer Research Fund are collaborating with the U.S. group to format the *Saccharomyces pombe* (*S. pombe*) yeast genome for use with the Prolog query system.

The graphic interface permits the user to display several side-by-side maps of a chromosome, zoom in on a specific region, pose questions about structural features, and even call up bibliographic information for papers published on that region. "This is clearly state of the art in being able to browse the information," says Michaels. "The other real advantage to this system is while you start off with only certain maps, you can generate your own collection of maps very quickly."

Genographics is easy enough to use that it's perfect for museum demonstrations. Copies have been supplied to the Museum of Science and Industry in Chicago and the Smithsonian Institution. The Smithsonian plans to use the software in an upcoming exhibit on "Science in American Life," specifically in a section on new developments in biotechnology. "That tool allows people, even grade-school kids, to begin thinking about the organization of chromosomes," explains Michaels.

These various software tools have been distributed to about 100 laboratories, including the Harvard Genome Center, the Lawrence Berkeley and Argonne National Laboratories, and several here at NIH. Michaels continues to work with collaborators at Argonne, and with Ron Taylor in his own lab at DCRT to expand the capabilities of the software tools under development. In addition to working with Taylor to develop automated processes to allow scientists to incorporate their own sequence data into the query database, Michaels provides input from the perspective of a biologist as to what new analysis features need to be incorporated into the software. All of the tools, while useful and unique, are still prototypes—ever-expanding prototypes. The

group is now working to build a tool that will allow analysis between chromosomes of different species, facilitating a search for similarities and clues to the evolution of DNA.

PC Genographics is the closest to a finished software product that has emerged from the group effort yet. If you would like a copy, contact Michaels, 402-1140. He will be teaching a course on the software on Aug. 5 through the DCRT Training Program. □

Four Named to NCNR Council

Four new members have been appointed to the National Advisory Council for Nursing Research, the main advisory body to the National Center for Nursing Research. They are: Drs. Linda Rae Cronenwett, director of nursing research at Dartmouth-Hitchcock Medical Center in Hanover, N.H.; Rose S. Fife, associate professor of medicine, biochemistry, and molecular biology at Indiana University School of Medicine in Indianapolis; Marguerite Rodgers Kinney, professor in the School of Nursing, University of Alabama at Birmingham; and Janice M. S. Zeller, professor in the department of medical nursing, Rush University in Chicago. □

DRG Honors Employees at Awards Ceremony

Dr. Donald H. Luecke, DRG deputy director, hosted the Division of Research Grants' annual awards ceremony recently. Numerous awards were presented to DRG employees. Speaking on behalf of Dr. Jerome G. Green, DRG director, and DRG management, Luecke extended their personal thanks to the following employees:

NIH Director's Award

Dr. Melvin M. Ketchel—In recognition of organizing the reviews of grant applications for a major trans-NIH program for the construction of biomedical research laboratories and animal breeding facilities.

NIH Merit Award

Dr. Mushtaq A. Khan—For exemplary performance in the development and testing of the electronic voting machine for rating grant applications.

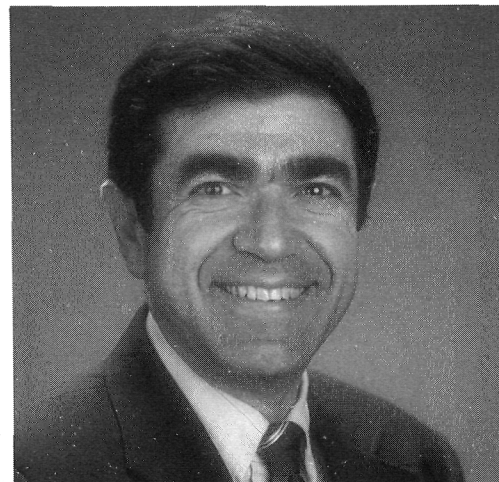
Glenn R. Maynard—For unique leadership abilities in ensuring the smooth, timely processing of thousands of research grant applications throughout the year.

Dr. Marcel W. Pons—For planning, organizing and co-directing the highly successful first DRG workshop for new scientific review administrators (SRAs).

Evadell G. Rogers—For dedicated and creative performance in monitoring and maintaining the central tracking process of the CRISP system.

Dr. Adolphus Toliver—For superior performance and contributions dedicated to maintaining the quality of the NIH research grant application peer review system.

Dr. Anita C. Weinblatt—For planning, organizing and co-directing the highly successful first DRG workshop for new SRAs.



Dr. Richard I. Martinez has recently joined the NIGMS Office of Review Activities as the scientific review administrator for the Minority Access to Research Careers review subcommittee. Prior to this appointment, he was a research chemist at the National Institute of Standards and Technology (NIST). At NIST, he formulated and implemented research programs to address longstanding problems in trace analysis and oxidation chemistry. Martinez obtained his Ph.D. in chemistry from the University of California, Los Angeles.



Dr. Donald H. Luecke, DRG deputy director, presents the DRG Equal Employment Opportunity Special Achievement Award to Dr. Donna J. Dean, chief, biological sciences review section.

DRG Equal Employment Opportunity Special Achievement Award

Dr. Donna J. Dean—For dedication, commitment, and performance in assuring opportunities for women in the extramural programs of NIH.

In addition to these awards, DRG employees were presented quality step increases, individual cash awards, length-of-service awards, employee-of-the-month awards, and three group cash awards. □

LIGHT**(Continued from Page 1)**

The new treatment technique was reported in a recent issue of the journal *Archives of Otolaryngology Head and Neck Surgery* by researchers from the Long Island Jewish Medical Center, New Hyde Park, N.Y. Dr. Bettie Steinberg, an NIDCD grantee who is one of the authors of the article, said that, "In most cases two or three operations a year are necessary to keep breathing passages open." She added that in extreme cases the tumors may need to be removed as often as once a week. Frequent operations can lead to scarring of the vocal cords and formation of web-like tissue called laryngeal webs, that connect portions of the vocal cords. These conditions eventually take their toll on the vocal cords, resulting in a weak and hoarse voice or complete absence of the voice.

Steinberg's team treated 30 adults and children with RLP who ranged in age from 18 months to 61 years. Only patients who required surgical removal of their tumors more frequently than every 5 months were included in the study. The therapy, called photodynamic therapy (PDT), involves an injection into the bloodstream of a special dye that is sensitive to bright light. The dye collects in tumors but not in healthy tissue. The tumors absorb the dye and are destroyed when the dye is activated by a bright light of a specific wavelength.

Steinberg found that in addition to tumor elimination, tumor regrowth dropped by approximately 50 percent in the 30 patients studied. Surprisingly, those who had the highest rate of tumor regrowth prior to PDT had the slowest rate of tumor regrowth following

PDT. Steinberg found no evidence that patients' sex or age had any effect on their response to the treatment.

The only reported side effect from this treatment was mild skin sensitivity to sunlight and fluorescent lighting. This sensitivity lasted approximately 9 weeks. The research team explained that patients were cautioned to avoid sunlight and fluorescent lighting following treatment. If they needed to go outside, they were cautioned to cover all areas of their skin. Children were kept out of school for approximately 6 weeks to avoid the fluorescent lighting. Those who heeded pretreatment precautions found this side effect to be an annoyance rather than a problem.

PDT was first developed in 1903 to kill certain tumors in humans. Although the treatment was promising, results were inconsistent and it was soon abandoned. Development of new, purified forms of the dye has contributed to the resurgence of this promising form of treatment.

Scientists and physicians are uncertain about how someone becomes infected with HPV. There are approximately 50 forms of HPV that are also responsible for other types of warts such as common skin warts and genital warts. Steinberg said that although the source of the infection is unknown, it appears that mothers with genital warts during pregnancy and delivery may infect their newborns with HPV, leading to RLP. She added that there may be a connection between forms of sexual activity with persons infected with genital warts and the development of RLP in adults.

The virus is inactive when it enters the body. In fact, it remains inactive in most of the individuals who are infected with it, becoming active in only a small number of

those infected—approximately 1 in 10,000, according to Dr. Allan Abramson, a member of the research team and chairman of the Long Island Jewish Medical Center's department of otolaryngology and communicative disorders. It is unknown what triggers the virus to become active.

Although RLP is rare, it is a serious problem for those who have to live with it. Steinberg reported that one of the team's patients was a 2½-year-old boy who was diagnosed with RLP at 16 months. Before being treated with PDT, the child had 20 previous operations, approximately one a month. Since being treated with PDT he has remained disease free. Steinberg will continue to monitor his progress.

Another patient treated by the team, a 27-year-old photojournalist, was diagnosed with RLP at age 20. He required an operation every 3 months to remove the tumors. He was free of the disease for 3 years while treated with a drug (interferon) that induces immunity to viral infection, but the papillomas recurred when the drug was discontinued. Steinberg reports that this patient has had no recurrence of the RLP since treatment with PDT in January 1989.

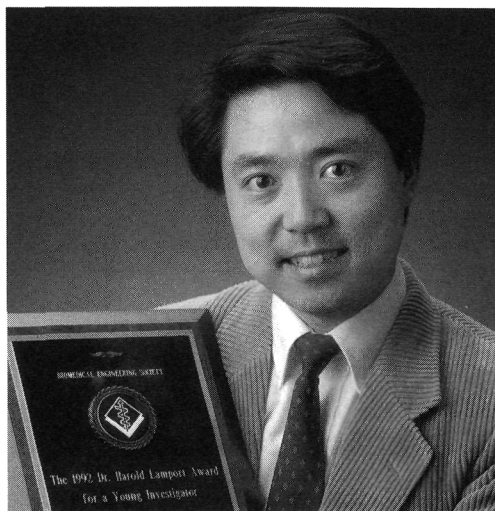
The NIDCD continues to fund Steinberg's research. She plans to investigate the effects of varying the dose of the photosensitive dye and red laser light, which she hopes will further retard the rate of regrowths. The effects of PDT on HPV in surrounding tissue will also be of interest to Steinberg, whose ultimate goal is better management and possible elimination of the viral cause of this disease. □

NCRR's Cheng Dong Wins 1992 Lamport Award

Dr. Cheng Dong of the Biomedical Engineering and Instrumentation Program (BEIP), NCRR, has received the 1992 Dr. Harold Lamport Award for a Young Investigator from the Biomedical Engineering Society, one of the societies comprising FASEB.

The Lamport Award recognizes innovative contributions in biomedical engineering research by young scientists. Dong's nomination was based on his research on human leukocyte rheology, especially as reported in his recent paper "Cytoplasmic Rheology of Passive Neutrophils" (*Biorheology* 1991;28:557-67).

Dong joined BEIP in 1990 from the laboratory of cellular mechanics and biophysics at the University of California, San Diego. A native of China, he received his Ph.D. in bio-



Dr. Cheng Dong

engineering from Columbia University in 1988.

He is interested in research on cellular bioreology and motility in the microcirculation, and is developing collaborative research projects with NIH investigators in sickle cell rheology, cancer invasion, and metastasis.

Dong previously received the 1990 Melville Medal of the American Society of Mechanical Engineers (ASME) and the 1989 ASME award for best paper in bioengineering. □

Volunteers Needed

Healthy volunteers ages 35-55, who are on no medications, are needed for studies on hormone secretion. For more information, contact Debbie Hu, 496-1891, ext. 11. □



TRAINING TIPS

The NIH Training Center, Division of Personnel Management, offers the following "hands-on" IBM and Macintosh computer classes:

Personal Computing Training 496-6211

Course Titles	Starting Dates
Welcome to Macintosh	7/9, 27, 8/12
MacWrite	8/4
Intro to WordPerfect 2.0 (Mac)	8/4
Intro to Microsoft Word (Mac)	8/11
Advanced Microsoft Word	7/20
Excel Level 1	7/13, 8/7
Excel Level 2	7/21
Excel Level 4	7/29
Lotus for Mac — Level 1 (new)	7/23
Filemaker PRO	7/14
FoxBASE-Level 1 (Mac)	(upon request)
FoxBASE-Level 2 (Mac)	(upon request)
MacDraw PRO	7/28
CricketerGraph	7/15
PowerPoint	7/8
3COM PC Network-Level 1	7/10, 8/10
Intro to Personal Computing for New Users	7/16, 8/14
Introduction to DOS	7/7, 23
Introduction to Windows 3.0	7/8, 27
WordPerfect for Windows (new)	7/22, 8/17
Introduction to WordPerfect 5.1	7/14, 29
WordPerfect 5.1 — Advanced Topics	8/4
Printing with WP 5.1 and Laser Printers	8/13
Intro to Harvard Graphics, Rel. 2.3	7/27
Intermediate Harvard Graphics, Rel. 2.3	8/14
Intro to Paradox	7/9
Intermediate Paradox	7/10
Advanced Paradox	8/7
Intro to dBASE IV (new)	7/21, 8/13
Intro to dBASE III+	7/28
Intro to Lotus 1-2-3, Rel. 2.2	7/13
Intermediate Symphony	7/16
IMPACT System for Personnel Staff	7/20, 8/11
IMPACT System for MSCs	7/13, 8/17
IMPACT System for Admin. Staff	7/23, 8/13
IMPACT System for Professional Staff	7/23, 8/13

NLM Mourns Charles Walker

The staff of the National Library of Medicine was saddened recently by the unexpected death of Dr. Charles A. Walker, 56, director of NLM's Office of Outreach Development. He died May 16 at Shady Grove Adventist Hospital after a heart attack.

A native of Foreman, Ark., Walker had been chancellor of the University of Arkansas at Pine Bluff before joining the NLM staff in 1991. At NLM, he was spearheading an effort to connect underserved health professionals, many of whom practice in rural and inner-city minority communities, to the library's computerized medical information resources. One focus of his effort was the Lower Mississippi Delta region, one of the poorest areas of the nation. The library plans to continue this outreach program to which Walker made such an important contribution.

Walker graduated from Arkansas AM&N State College and received a master's degree in biochemistry and nutrition from Washington State University. He had a doctorate in neuropharmacology from the Stritch School of Medicine at Loyola University in Chicago, and he did postdoctoral study at Harvard, the Woods Hole Marine Biological Laboratory, and the University of California at Berkeley.

He was author or coauthor of some 150 scientific publications. His research included work on drugs to control jet lag and space and motion sickness. In 1988, he organized the first international symposium on chronopharmacology and chronotherapeutics in



Dr. Charles A. Walker

Tallahassee. He also organized symposia in Japan, China, France, Italy, and Germany.

A special tribute to Walker by Rep. Louis Stokes of Ohio appeared in the *Congressional Record* (June 1, page E1609). He cited Walker's many accomplishments, including the establishment of the first and only doctorate program in the pharmaceutical sciences at a historically black institution, Florida A&M. He said, "We have lost a good friend, our youth have lost a positive role model, and our nation has lost a valued scientist, educator, and leader."



Family members, friends, and colleagues of Dr. Anthony Rizzo attended a symposium in his memory at the American Association for Dental Research (AADR) meeting held recently in Boston. Rizzo was a periodontist and science administrator with NIDR who died a year ago April while attending the AADR meeting in Mexico. The "Anthony A. Rizzo Memorial Symposium: Molecular Mechanisms in Plaque Development" drew hundreds of attendees. Pictured are (from l): Dr. William Kohn, Office of the Director, NIDR; Dr. Ray Williams, Harvard School of Dental Medicine; Dr. Susan Fisher, University of California, San Francisco, School of Dentistry; Dr. Lois Cohen, director, Extramural Program, NIDR; Rizzo's son, Michael; his daughter, Patricia; his wife, Teresa; his sons, Daniel, Jonathan, and David; his sister, Antonia Reed; Dr. Jerry Keith, chief, Laboratory of Microbial Ecology, NIDR; Dr. Paul Kolenbrander, Laboratory of Microbial Ecology, NIDR; and Dr. Dushanka Kleinman, NIDR's deputy director, who led the symposium.

DCRT Computer Training Classes

Classes	Dates
SAS Fundamentals II for Non-Programmers	6/25, 26
Managing Data Effectively	6/25
Introduction to Using UNIX Workstations at NIH	6/30
Getting Started with DB2	6/30-7/2
Intermediate PC-DOS	7/6, 7
Mainframe Services at NIH	7/8
Introduction to the Convex Supercomputer	7/8
Maxess	7/9
ENTER BBS	7/10
Intro to WYLBUR	7/13, 15, 17, 20, 22, 24
Introduction to PC—Mainframe	
Communication with ProComm Plus	7/14
Developing Data Entry Applications with SAS/FSP	7/14
MLAB Tutorial	7/14
DB2: SQL and QMF Selected Topics	7/15-17
OS/2 2.0 Overview	7/15

Classes are offered by the DCRT Training Program without charge. Call 496-2339 for more information. □

NIH Signs Agreement with National Science Foundation, Minorities to Benefit

On June 11, NIH and the National Science Foundation entered into an agreement that should greatly enhance opportunities for minority students in science and mathematics education programs.

At the signing ceremony, held in Wilson Hall, NIH director Dr. Bernadine Healy said, "The need for more minority biomedical scientists is well known among those of us in the health professions." Not enough minority students are being adequately prepared to enter the pipeline to higher education, beginning in the elementary grades, she said. "That is why the programs put in place by this partnership will aim at having an impact early in the educational process for minority students.

"I think it is important to highlight one other very exciting element of this partnership," she continued. "The programs we are putting in place will bring middle grade and high school students to a university campus for much of their laboratory work—during the summers and on the weekends. They will learn science by doing science: seeing and touching science in the laboratory. For me, that is the thrill of this profession—and one that I very much miss—watching your hopes and dreams become a reality in the laboratory and the clinic."

Dr. Walter Massey, NSF director, agreed that a "consolidation of our efforts whenever our missions overlap is not only a wise and efficient use of federal dollars but also a tremendous benefit to the millions of students we aim to serve." He called the agreement a "bold new paradigm for federal intervention."

NIH's associate director for minority programs Dr. John Ruffin, along with Dr. Luther Williams, NSF assistant director for education and human resources, were responsible for working out the details of the agreement.

"Creating opportunities for young people," is how Ruffin describes this initiative.

"Both NIH and NSF share a common allegiance to the notion that investments in science—and investments in young scientists—are crucial to the intellectual, social and economic well-being of this country," he said. "This partnership represents an action-oriented federal response to the demands our nation faces for more young scientists. By sharing this commitment, both NIH and NSF can offer academic enrichment experience in the classroom and laboratory to students who otherwise may not have the opportunity to excel in science."

The objective of this memorandum of understanding is to develop a mechanism whereby NIH and NSF will jointly plan, implement, and evaluate education activities offered through NSF's three programs: Alliances for Minority Participation, Comprehensive Regional Centers for Minorities,



Signing the official memorandum of understanding are (seated) Dr. Bernadine Healy, NIH director, and Dr. Walter Massey, NSF director. Standing are Dr. John Ruffin (l) and Dr. Luther Williams, who will serve as cochairmen of the working group to implement the agreement.

and Partnerships for Minority Student Achievement.

Williams, a former NIGMS official, said, "We hope to build on these efforts and expand as opportunities arise." Said Rep. Louis Stokes, who wasn't able to attend: "Since I have been in Congress, there have been thousands of pages written on the status of minority health and education. Numerous reports have been issued. There have been many good ideas. But what is important about your signing ceremony is that you are putting your ideas into action."—Anne Barber □

Career Development Workshops Offered by NIH Training Center

The NIH Training Center, Division of Personnel Management and the Office of Equal Opportunity have cooperatively developed a series of career development workshops specifically for GS-1 through GS-8 and Wage Grade equivalent positions. These workshops will assist employees in identifying career options and developing a plan of action for reaching their potential. Each workshop has a special focus with specific goals. Together they provide a wealth of practical career planning information and tools for effective self assessment. Workshop titles and dates are:

Career Assessment and Planning	6/29,30
NIH Careers: Finding the Best One For You	7/23
NIH SF-171 and KSA Preparation	7/24,8/12
Networking and Interviewing Skills	7/31
Projecting a Professional Image	8/13,14

For additional information and/or a brochure, call the NIH Training Center, 496-6211. □

NHLBI Hosts Minority Health Forum

This month, NHLBI will convene a 2-day national forum on the health of America's minority populations.

"Minority Health Issues for an Emerging Majority" will be held June 26-27 at the Grand Hyatt in Washington, D.C. It is the fourth in a series of national forums on the cardiovascular health, pulmonary disorders, and blood resources of minorities. The series is sponsored by NHLBI, the NHLBI ad hoc committee on minority populations, and the National Medical Association.

The forum will feature plenary and poster sessions, workshops, and roundtables covering research, epidemiology, health policy, access to care, and community intervention programs.

NIH director Dr. Bernadine Healy and NHLBI director Dr. Claude Lenfant will open the forum, followed by a keynote address by HHS secretary Dr. Louis W. Sullivan. Other speakers include Dr. James O. Mason, assistant secretary for health of the Public Health Service; Dr. Jarrett Clinton, administrator of the Agency for Health Care Policy and Research; and Dr. Vivian Pinn, director of the NIH Office of Research on Women's Health.

For more information about the forum, contact Jake Roberts, registration manager, (301) 951-3275. □